UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Jacquelyn Herrick, M.S. Entomologist

From: Matthew Sellner, M.S. Entomologist

Secondary Review: Jennifer Urbanski Saunders, Ph.D. Senior Entomologist

Date: 8/16/2018

Subject: PRODUCT PERFORMANCE DATA EVALUATION RECORD (DER)

THIS DER DOES CONTAIN CONFIDENTIAL BUSINESS INFORMATION

Note: MRIDs found to be **unacceptable** to support label claims should be removed from the data matrix.

DP barcode: 446036
Decision no: 537946
Submission no: 1014971
Action code: R350
Product Name: Zyrox Fly Granular Bait
EPA Reg. No or File Symbol: 100-1541
Formulation Type: Granular bait
Ingredients statement from the label with PC codes included:
Cyantraniliprole 0.5% PC:446036

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m^2 or mg/cm^2 or mg/kg body weight as appropriate): Broadcast and bait stations: Low populations: 0.2 lb./1000 square feet. High populations: 0.4 lb./1000 square feet. Glue boards and sticky cards: 0.1 oz/square inch. Water dilution: Dilute 0.5 to 1.5 ounces bait/1 fl. oz. water, apply in six- to twelve-inch bands, to disposable cards, or to rope-wick.

Use Patterns: Apply to outdoor waste areas around commercial establishments, outdoor areas of commercial operations and outdoor areas of agricultural animal production facilities. Zyrox Fly Granular Bait may be used indoors at the sites listed above as a water diluted application if placed in bait stations suitable for granular baits with the exception of walkways within caged-layer houses or penned animal facilities where Zyrox Fly Granular Bait may be applied as broadcast scatter bait.

I. Action Requested: MRID 50490501 is reviewed here to determine if efficacy claims against flies (blow, bottle, face, house, stable), fire and carpenter ants (although not specifically listed on the proposed label, the general term "crawling insects" was included) and German and American cockroaches are supported.

II. Background: Registrant submitted efficacy data to add claims against German cockroaches, American cockroaches, various flies, and general crawling pests to the product label. Data were also submitted for non-public health pests (e.g., spotted wing *Drosophila* [Appendix 7], dump fly [Appendix 10]) and are not reviewed here.

III. MRID Summary:

MRID 50490501. Cyantranilliprole: Zyrox- Efficacy Data to support use of Cyantranilliprole Bait for control of flies and cockroaches, B. Cartwright, 2017. This MRID contains 17 different studies.

Appendix 1.

Laboratory evaluation of granular and paint-on application of Zyrox Fly Bait against nuisance flies (Determination of the efficacy of Zyrox Fly Bait as a granular and paint-on formulation compared with Maxforce Fly Bait).

(1) non-GLP

(2) **Methods:** This study was conducted in West Lafayette, Indiana, on mixed-sex adult vinegar flies, *Drosophila melanogaster* (laboratory strain obtained from the Department of Biological Sciences at Purdue University), phorid flies, *Megaselia scalaris* (pest populations breeding in containers housing laboratory cockroach colonies in the Department of Entomology, Purdue University), and blow flies, *Phaenicia sericata* (obtained by placing beef liver in various outdoor locations in West Lafayette, Indiana). Data for *Drosophila melanogaster* and *Megaselia scalaris* will not be reviewed here as they are not considered public health pests. Rearing conditions for any species were not reported except for indicating they were not starved prior to testing. Flies were contained in 12 by 12 by 12-inch nylon mesh cages provided with drinking water, 1 g of powdered milk mixture, and 1 g of bait (Zyrox Fly Bait or Maxforce Fly Bait, active ingredient identities and concentrations were not reported). For paint-on application, 1 g of bait was dissolved in 1 ml water and uniformly applied over a 10 by 10 cm piece of cardboard which was then hung vertically in the cage. Fly mortality (criteria not defined) was examined at 1, 2, 4, 8, 24, 48, and 72 hours at 25 ± 2 ºC and 50 ± 10% RH for five replications, using 10 adult flies of mixed-sex per replicate per species. Untreated control treatments are reported but not described. The data were not statistically analyzed.

(3) **Results:** Exposure of blow flies to 1 g Zyrox Fly Bait, in granules or paint-on formulation, or Maxforce Fly Bait in granules, caused ≥90% mortality within 72 hours, and untreated control mortality surpassed 10% after 48 hours.

(4) **Conclusion: Unacceptable.** Untreated control mortality for blow flies surpassed 10% after 48 hours for both Zyrox cardboard treatment and Zyrox granular; at this point, mortality had not reached 90%. In addition, the treatment of the controls was not reported, the rate of the application to disposable cards (1.043 oz/fl oz water) exceeded the lowest labeled rate of 0.5 oz/fl oz water, and data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general surface/paint-on application, and as an application to rope wick were not provided.

Appendix 2.

Evaluation of Zyrox Granule and Paint-On Fly Bait against Green Bottle Flies (*Lucilia sericata*) (Determination of the efficacy of Zyrox fly bait as a granular and paint-on versus a commercial standard)

(1) non-GLP

(2) **Methods:** Zyrox fly bait (active ingredient identity and concentration not reported [Note: mention of indoxacarb is made in the data files, which is not the active ingredient in the labeled product nor is it indicated as the product used]) was evaluated in Meansville, Georgia, as a granular formulation and as a paint-on for control of purchased laboratory colonies of 2- to 3-day old adult green bottle flies (*Lucilia sericata*) and compared to granular formulations of Maxforce® Granular Fly Bait (0.5% imidacloprid) and untreated control groups. Tests were conducted in five replications of 10 flies placed in a 1 by 1 by 1 foot cage supplied with 1 g of Zyrox granules, 1 g of Maxforce granules (to deliver 5.0 mg/cage imidacloprid), or a 10 by 10 cm cardboard square painted on one side with a 1: 1 mixture of Zyrox: water (the amount of Zyrox granules dissolved or mass applied to the cardboard squares was not

reported) then allowed to dry for 2 hr and hung vertically in the cages. Sucrose soaked cotton swabs were provided as an alternate food source. Untreated control treatments are reported but not described. Flies were starved for approximately 18 hours prior to introduction. The number of alive (criteria not defined), knockdown (criteria not defined), and dead (criteria not defined) flies was recorded at 1, 6 and 24 hr, and then daily for 5 days at 70 °F and 55% RH. Results are presented as percentage mortality, but the authors do not report if this mortality was corrected for control mortality, or if mortality represents dead flies only or dead plus knockdown; it appears from the raw data that the tabulated data are showing mortality alone. Mortality caused by the test substances was compared to control groups by using a one-tailed test at $p = 0.05$ and between test substances by a two-tailed test at $p = 0.05$.

(3) **Results:** Exposure to 1 g Zyrox Fly Bait granules and Maxforce Granular Fly Bait caused ≥90% mortality within 4 days while exposure to Zyrox Fly Bait painted on to cardboard caused a maximum mortality of 74% at 5 days. Control mortality did not equal or surpass 10% during the test.

(4) **Conclusion: Unacceptable.** Percent mortality did not reach 90% for the paint-on application. Active ingredient identity and concentration are not reported in this study. Even if the tested product was confirmed to be the registered product, the amount of product applied to the disposable cards (1.043 oz/fl oz water) exceeded the lowest labeled rate of 0.5 oz/fl oz water, the length of starvation prior to testing appears to be excessive, it is unclear how the tested bait station rate (1 gram per cage) translates to the labeled rate of 0.2 lbs/1000 sq ft, the treatment of the controls was not reported, and data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 3.

Syngenta Bait Trail 2015-Lab Study (Determination of the of the efficacy of Zyrox fly bait as a granular and paint-on application versus Maxforce bait granules against two fly species)

(1) non-GLP

(2) **Methods:** This study was conducted in Texas against 5- to 7-day old adults of the secondary screwworm fly (*Cochliomyia macellaria*) and of the green bottle fly (*Lucilia sericata*) that had been maintained at 27 ℃ and 70% RH at 14:10 L:D. Five replications of 20 flies for each species were tested in 30 by 30 by 30 cm cages by providing 28.38 grams of Zyrox granules (active ingredient identity and concentration not reported) or Maxforce granules (active ingredient identity and concentration not reported) in a petri dish, or a 15 by 2-cm popsicle stick painted with an unreported amount of a solution resulting from dissolving 28.38 g of Zyrox granules dissolved in an equal mass of water. Untreated controls consisted of flies provided with sugar and water; treatment flies were also provided with sugar and water. Morbidity (insects walking but unable to fly) and mortality (criteria not defined) were recorded at 1, 6, 24, 48 and 96 hours with subsequent observations for screwworm flies at 168 and 216 hours and green bottle flies at 144 and 168 hours, or until 95% mortality was observed. Two trials were conducted. The environmental conditions during the test were not reported. Mortality over time data were subjected to analysis of variance and means were separated by using Tukey's HSD test at $p = 0.05$.

(3) **Results:** Percent mortality was not tabulated, so results are based on estimation of 90% efficacy from bar graphs. Exposure of the secondary screwworm fly *Cochliomyia macellaria* and of the green bottle fly *Lucilia sericata* to Zyrox granules or Maxforce granules in a petri dish, or a 15 by 2-cm popsicle stick painted with Zyrox granules dissolved in water, all caused ≥90% mortality (average of two trials) within 168 and 144 hours, respectively.

(4) **Conclusion: Unacceptable.** The data suggest that the tested product, when applied as described above, kills the secondary screwworm fly and the green bottle fly within a week of application. However, it is unclear to what labeled use pattern the popsicle test would apply and therefore the acceptability of the rate cannot be determined, the number of individuals per replicate was low for both treated and untreated controls, it is unclear how the tested bait station rate (28.38 grams per cage) translates to the labeled rate of 0.2 lbs/1000 sq ft, and data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a treatment to disposable cards, as a general paint-on surface application, and as an application to rope wick were not provided. In the future, the mean percent mortality should be reported at each time point for each species for each test.

Appendix 4. Cyantraniliprole: Zyrox Fly Bait (A20708A) Label Expansion (Determination of the efficacy of Zyrox bait granules and paint-on formulation against blue bottle flies.

(1) non-GLP

(2) **Methods:** This test was conducted in Vero Beach, Florida, on adults of blue bottle fly (*Calliphora vomitoria*) obtained as pupae from i2L Research, Baltimore, Maryland. One-day old adult flies (starved for 24 hours prior to bait introduction) were tested in 1-cubic foot cages with 15-44 flies per cage and four replicates of each treatment were exposed to 1 g of Zyrox granular fly bait (0.5% cyantraniliprole to deliver 5.0 mg/cage cyantraniliprole), 1 g of Maxforce fly bait 0.6 GR (at an unreported concentration of imidacloprid) or a 10 by 10 cm piece of cardboard painted with a solution formed by combining 1 ounce of Zyrox granular bait (5.0 mg/100 square cm cyantraniliprole) with 1 fluid ounce water, at 78 °F for up to 7 days with the number of moribund (exhibiting leg or antennal movement but with little sign of recovery) and dead (no response to probing) flies recorded at 1, 6, 24, 48, and 96 hours after exposure and at 7 days. Competing food (type unknown) and water were provided at the time of bait introduction. Percent mortality was calculated at each assessment interval by comparing number of dead flies to number of live flies per cage at trial initiation. Means were separated by using least significant different (LSD) test at $p = 0.10$.

(3) **Results:** Exposure of blue bottle flies to Zyrox granular fly bait or Maxforce granular fly bait at 1 gram/1 cubic foot resulted in ≥90% mortality at 2 and 4 days exposure, respectively. Exposure to the paint-on application did not result in greater than 90% mortality at the conclusion of the study. Control mortality surpassed 10% by day 7.

(4) **Conclusion: Unacceptable.** The amount of product applied to the disposable cards (1 oz/fl oz water) exceeded the lowest labeled rate of 0.5 oz/fl oz water and did not result in acceptable mortality; replication was low and the number of individuals per replicate too variable; it is unclear how the tested bait station rate (1 g/1 sq ft) translates to the labeled rate of 0.2 lbs/1000 sq ft; the length of starvation prior to testing appears to be excessive; and data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 5. Cyantraniliprole: Zyrox Fly Bait (A20708A) Label Expansion (Determination of the efficacy of Zyrox Fly Bait on the stable fly).

(1) non-GLP

(2) **Methods:** This study was conducted in Vero Beach, Florida, against stable fly (*Stomoxys calcitrans*) adults from a colony originating from the USDA-CMAVE laboratory in Gainesville, Florida (insecticide susceptibility status and rearing conditions not reported). The following treatments were tested in 1 cubic foot cages: Zyrox fly granular bait (0.5% cyantraniliprole) prepared as a paint-on paste by dissolving 1.5 ounces of the product in 1 fl. oz. of water then painted on a 10 cm by 10 cm piece of poster board (2.13 mg/square cm cyantraniliprole) which was then suspended from the ceiling; 1 g Zyrox fly granular bait in a small dish; (A20708A); 1 g Maxforce fly bait 0.6 GR (imidacloprid, active ingredient concentration not reported) in a small dish; and an untreated control with no bait. All treatments were given water and Gatorade throughout the study. Pupae were placed into small cups within a 1 cubic foot test cage, and 24 hr following emergence the granular baits or poster board were placed in the cages, while negative control treatments consisted of cages receiving no treatment. Four replicates of an average of 44 insects per replication were tested at 78 °F, and the number of moribund (exhibiting limited leg or antennal movement but otherwise immobile) and number of dead (no movement in response to stimuli) flies per cage were assessed at 1 and 6 hours after exposure, and at 1, 2, 4, and 7 days after exposure without removal of the baits. Percentage mortality was calculated at each interval by comparing number of dead flies to the number at trial initiation. Treatment means were separated by using least significant difference at $p = 0.10$.

(3) **Results:** Exposure of stable flies to disposable cards treated with Zyrox fly granular bait caused ≥90% mortality within 4 days exposure (Table 1). Mortality for the Zyrox granular bait never reached 90%. Mortality in the untreated control surpassed 10% on day 7 of the test.

Table 1. *S. calcitrans* percent mortality following exposure to bait material

				Total Flies	1 Day	2 Day	4 Day	7 Day
1	Untreated Check	Rate	Method	43.2a	0.2b	1.0d	7.7c	10.8c
2	Zyrox (A20708A)	1.5 oz/floz	Paint	48.6a	6.8a	87.1a	95.6a	100.0a
3	Zyrox (A20708A)	3.2 oz/1000 sqft	Scatter	39.2a	5.1a	40.2b	82.3a	88.4a
4	Maxforce fly bait	5.7 oz/1000 sqft	Scatter	43.4a	2.4ab	16.5c	50.5b	66.9b

Means followed by same letter do not significantly differ (P=0.10, LSD)

(4) **Conclusion: Partially acceptable.** The study indicates that the product, when diluted at a rate of 1.5 oz bait/1 fl oz water and applied to poster board unaged, kills stable flies. However, the amount of product applied to the disposable cards (1.5 oz/fl oz water) exceeded the lowest labeled rate of 0.5 oz/fl oz water; the granular bait exposure never resulted in 90% mortality and it is unclear how the tested rate (1 g/1 sq ft) translates to the labeled rate of 0.2 lbs/1000 sq ft; and data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 6. Zyrox Fly Bait for control of German cockroach (Evaluation of three insect bait formulations against several species of urban pests: German cockroach (*Blattella germanica*), American cockroach (*Periplaneta americana*), red imported fire ant (*Solenopsis invicta*), Florida carpenter ant (*Camponotus floridanus*) and silverfish (*Lepisma saccharina*).

(1) non-GLP

(2) **Methods:** This test was conducted for each bait tested in Gainesville, Florida, on 5 replicates of 10 adult male German cockroaches (*Blattella germanica* Orlando strain), 5 replicates of 5 adult male and 5 adult female American cockroaches (*Periplaneta americana*), an unknown number of replicates of 0.3g of mixed-size adult red imported fire ants (*Solenopsis invicta*), 3 replicates of 1.0 g of brood and 3.0 g of adult Florida carpenter ants (*Camponotus floridanus*), and an unknown number of replicates of 5 adult silverfish (*Lepisma saccharina*) from laboratory colonies maintained in Urban Entomology Laboratory at the University of Florida maintained at 23.6 ± 2.5 °C and 51 ± 16% RH, and L14: D10 (insecticide susceptibility status was not reported). Silverfish data will not be reviewed here. Zyrox fly granular bait (0.5% cyantraniliprole), Maxforce granular fly bait (0.5% imidacloprid and 0.1% Z-9-tricosene), or DuPont Advion insect granule (0.22% indoxacarb) were tested by placing 1.0 ± 0.1 g (for German cockroaches and both ant species) or 2.0 ± 0.1 g (for American cockroaches) of each granular bait (or no bait for negative controls) into 51 by 35 by 13 cm transparent plastic boxes containing harborages (7.6 by 12.7 cm folded white index cards for German cockroaches, 15 by 15 cm corrugated cardboard for American cockroaches, not described for the ants), a portion of pre-weighed food, and the insects. Mortality (criteria not defined) and consumption was recorded and dead specimens were removed from arenas at 1, 2, 3, 7, 10, and 14 days after treatment. All ants were frozen then counted at the end of the study. The environmental conditions during testing were not reported. The 24-h bait and dog food consumption (mg per g body weight) were calculated as $[F_B-\{F_B*[(WC_B-WC_A)/WC_B]\}-F_A]/W_t$, where F_B is the weight of food portion (dog food or bait in mg) at the beginning of the experiment, WC_B is the weight of weight-change control food (in mg) before placement in the arena, WC_A is the weight of weight-change control food (in mg) 24 hr after placement into the arena, F_A is the weight of food (in mg) remaining 24 hr after placement into arena, and W_t is the total weight (in g) of test insects placed in the arena (estimated from average weights of laboratory colony: German 0.567 g, American 9.594 g, fire ant 0.3 g, adult carpenter ant 3.0 g). Percentage bait selection over dog food was determined by calculating the percentage of total consumption that was bait as [GB/(GB+DF)]*100, where GB is 24 hr bait consumption (in mg) and DF is dog food consumption (in mg). Percentage bait selection among baits was compared by using one-way analysis of variance (ANOVA) and Tukey's test. Corrected cumulative mortality (%) was calculated by using Abbott formula (Abbott 1925) for cockroach tests, and Schneider-Orelli formula for ant tests. Corrected cumulative mortality (%) data were arcsine-square root transformed prior to one-way ANOVA, and means were separated using Tukey's test ($\alpha = 0.05$).

(3) **Results:**

There was difficulty calculating bait consumption because granular bait tended to absorb water and therefore only German cockroach data were provided: German cockroaches preferred Zyrox over dog food with percentage of bait selection at about 84.10 ± 7.77%, which was greater than that observed in indoxacarb (39.43 ± 7.01%) or imidacloprid (23.55 ± 6.77%).100% cumulative mortality (i.e. corrected with Abbott's formula) was observed for German cockroaches after 72 hours of exposure to the Zyrox bait. All German cockroaches were dead after 14 days of exposure. American cockroach cumulative mortality only reached ~60% for males and ~80% for females after 14 days of exposure to Zyrox. About 90% of fire ants "had died" (i.e. it wasn't clear if cumulative mortality or actual mortality was reported) after 14 days of exposure to Zyrox. Control mortality in the Florida carpenter ant surpassed 10% between days 3 and 7 of the test and uncorrected mortality after exposure to Zyrox didn't reached >90% until day 10. Note that all percentages reported were approximate; raw data or average uncorrected mortality in tabular format was not given.

(4) **Conclusion: Unacceptable.** Raw or uncorrected mortality data were not provided (all percentages reported above were estimates). It was unclear how the baits were applied within the arenas (e.g., as a scatter, in a station). The product was not efficacious against American cockroaches. The number of individuals tested for fire ants and carpenter ants was not reported. The carpenter ant study had high control mortality and too few replicates.

Appendix 8. Cyantraniliprole: Pest expansion for Zyrox fly bait label (determination of the efficacy of Zyrox Fly Bait against four species of flies: black eyed fly (*Drosophila replete*), the grey flesh fly (*Sarcophaga bullata*), the small brown dung fly (*Coproica ferruginata*) and the stable fly, (*Stomoxys calcitrans*).

(1) non-GLP

(2) **Methods:** This study was conducted in West Lafayette, Indiana, against the small brown dung fly, *Coproica ferruginata* (20 flies per replicate), the black eyed fly, *Drosophila repleta* (20 flies per replicate), the grey flesh fly, *Sarcophaga bullata* (10 flies per replicate), and the stable fly, *Stomoxys calcitrans* (5 flies per replicate) (methods and data for the small brown dung fly and the black eyed fly will not be reviewed here). Five replicates of the indicated number of individuals per species were placed into a round test jar (8 inch diameter by 7 inches high; 0.338 square feet) containing 1 gram of dry powdered milk and sugar (50:50; w:w), and either 1 gram of Zyrox Fly Bait granules, Zyrox Fly Bait paint-on prepared by dissolving 1 g Zyrox Fly Bait granules dissolved in 1 mL water and painted onto a 10 by 10-cm piece of cardboard, or 1 g Maxforce Fly Bait. The active ingredient identities and concentrations were not reported in this portion of the MRID. Stable flies were collected from cattle farms at Purdue University's Animal Sciences Research and Education Center (ASREC) in West Lafayette, Indiana. Grey flesh flies (pupae) were purchased from Carolina Biological Supply (pesticide susceptibility status was not recorded). The tests were conducted at 25 ± 2ºC and 50 ± 10% RH and fly mortality (criteria not defined) was determined at 1, 6, 24, 48, and 72 hours. Standard deviations were calculated but the data were not otherwise statistically analyzed.

(3) **Results:** Exposure to Zyrox Fly Bait granules, Zyrox Fly Bait disposable card treatment, and Maxforce Fly Bait caused ≥90% mortality within 24 hours. Control mortality remained acceptable throughout the study.
(4) **Conclusion: Unacceptable.** The treatment of the controls was not reported, the number of individuals per replicate was low, the rate of the disposable card treatment (1.043 oz/fl oz water) exceeded the lowest labeled rate of 0.5 oz/fl oz water (and as noted by the study author, "the greater surface area may have promoted feeding, especially as relates to the time necessary to find the bait and the time spent on the bait"), it's unclear how the granular bait rate translates to the labeled rate of 0.2 lbs/1000 sq ft, and data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 9. Laboratory evaluations of a novel fly bait (Zyrox® Fly Granular Bait (0.5% cyantraniliprole)) for control of the German cockroach, (*Blattella germanica*) compared to a positive control.

(1) non-GLP

(2) **Methods:** This test was conducted in Blacksburg, Virginia, on the Mosby strain German cockroaches (*Blattella germanica*) collected from Mosby Court apartments in Richmond, Virginia, in 2012, reared in large plastic storage containers with folded cardboard harborages and fed on commercial dry dog food and water at ~23 °C, ~70% RH,

and at a light/dark cycle of 12:12 L:D. Earlier bioassays indicated a resistance to indoxacarb, but resistance to other active ingredients is not known. The test was conducted in five replicates of 10 adult male cockroaches each in 46 by 23 by 10 cm arenas each containing a cardboard harborage, a water source, and dry dog food. Cockroaches acclimated to the arenas for approximately 72 hr, and were starved for eighteen hours prior to the test. The bait or dry dog food was offered to the cockroaches in a choice test manner, where 0.1034 g Zyrox Fly Granular Bait (0.5% cyantraniliprole; rate of 3.2 oz/1000 square feet), 0.3795 g Maxforce® FC Magnum Roach Killer Gel Bait (0.05% fipronil; rate of 3 g/square yard) or a second food source (untreated control) was introduced and cockroach mortality (cockroaches displaying no response to gentle probing) was assessed at 1, 2, 3, 4, 6, and 24 hr and at 2, 3, 4, 7, 9, 10, 14, 17, 21, and 28 days. LT_{50} values and confidence intervals were calculated by using an unreported procedure, and significant differences between the products were assumed if the confidence intervals did not overlap.

(3) **Results:** Exposure to 0.1034 g Zyrox Fly Granular Bait caused ≥90% mortality to German cockroaches within 408 hr (17 days) exposure. Control mortality remained less than 10% for the duration of the study.

(4) **Conclusions: Unacceptable.** Cockroaches were starved for a long period of time before introduction of the bait, it took an unacceptably long time to reach >90% efficacy (>14 days), and data to support the use of the product as a scatter bait, as a treatment to disposable cards, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 11. Evaluation of Zyrox Granular Fly Bait (0.50% cyantraniliprole) against Stable Flies to determine the efficacy of Zyrox Granular Fly Bait in laboratory and field tests against stable flies.

(1) non-GLP

(2) **Methods:** This study was conducted in the laboratory in Gainesville, Florida, on 25 mixed-sex, 3- to 5-day old stable flies (species not identified in this report) from an unreported source supplied with 10% sugar water were exposed in three replications to 1 tablespoon Zyrox Granular Fly Bait (0.5% cyantraniliprole) or a sugar water only untreated control in cages of undescribed dimensions. Fly mortality (criteria not defined) was recorded twice daily for three days. A field study at the same location exposed 200 mixed-sex, 3- to 5-day old stable flies per replicate within four replicates of 21.4 by 7.67 ft (164 square foot) windowless tents each containing four portions of 4.0 g each Zyrox (16 g total, equivalent to 0.215 lbs/1000 sq ft, at an a.i. rate of 80 mg/164 square feet cyantraniliprole) and four cotton 10% sugar water-soaked cotton balls. Each tent contained a control cage with 200 stable flies supplied with 10% sugar water-soaked cotton balls. Mortality (criteria not defined) was assessed at 24-hour intervals. The data were not statistically analyzed.

(3) **Results:** Exposure to 1 tablespoon Zyrox Granular Fly Baitin the laboratory caused ≥90% mortality to stable flies within 3 days. Exposure to granular Zyrox in enclosed tents resulted in 89.75% mortality to stable flies within 4 days. Control mortality remained acceptable throughout both experiments.

(4) **Conclusion: Partially acceptable.** The semi-field data indicate that the unaged product kills stable flies at a rate of 0.215 lbs/1000 sq ft when applied in a bait station (note this is slightly higher than the labeled rate); in the future, it is recommended to run this particular test a few days longer if 90% mortality hasn't been achieved and if control mortality hasn't exceeded 10%. While the laboratory study showed greater than 90% mortality for stable flies, replication and number of individuals per replicate was low and it's unclear how the tested rate would apply to the labeled rate. Data to support the use of the product as a scatter bait, as a treatment to disposable cards, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 12. Evaluation of Zyrox Granular Fly Bait and Paint-On and Scatter Bait Application against House Flies (*Musca domestica*), determine the efficacy of Zyrox fly bait in paint-on and scatter applications against house flies.

(1) non-GLP

(2) **Methods:** This study was conducted in Meansville, Georgia, on 5 replications of twenty 2- to 5-day old house flies (*Musca domestica*) from a laboratory colony purchased from an unreported source (pesticide susceptibility status not reported). The flies were released into 1 by 1 by 1 foot cages. Three rates of Zyrox Fly Bait (active ingredient identity and concentration not reported in this report) were formulated for paint-on application by mixing 1 g of the product in 2.08, 1.04 or 0.70 ml water to constitute 48, 96, and 144 g product/100 ml water, respectively, which was then painted onto 10 by 10 cm cardboard squares that were suspended from the top of the cage. A treatment with the granular product at 3.2 oz/1,000 square feet was conducted by placing 0.0032 ounces (0.09 g) within a petri dish into each cage (about one-tenth the active ingredient rate of the paint-on formulations), and untreated control groups received no bait treatment. 10% sucrose-soaked cotton swabs were used as the alternate food source. The number of alive, moribund, and dead (criteria not defined) flies inside the cage were recorded at 1, 6, 24, 48, 72, and 96 hr at 72 °F and 48% RH. Differences between treatment and control groups were determined by using a *t*-test at $p \leq 0.05$.

(3) **Results:** Exposure to Zyrox Fly Bait as paint-on treatments at 48, 96, and 144 g product/100 ml water caused ≥90% mortality of house flies within 96, 48, and 48 hr, respectively. Exposure to Zyrox Fly Bait in a scatter treatment at 3.2 oz/1,000 square feet caused ≥90% mortality of house flies within 48 hr. Control mortality remained acceptable throughout the study.

(4) **Conclusion: Partially acceptable.** The data indicate that the unaged product kills house flies when applied at a rate of 0.5 oz bait/1 fl oz water to disposable cards. The data also indicate that the unaged product kills house flies when applied in a bait station at a rate of 3.2 oz/1000 square feet. In the future it is recommended that at least 50 flies be used per replicate.

Appendix 13. Cyantraniliprole: Paint-on applications of Zyrox fly granular bait for housefly control (*Musca domestica*) to determine the efficacy of Zyrox Fly Bait as a paint-on and scatter treatments against house flies.

1) non-GLP

(2) **Methods:** This test was conducted in Gainesville, Florida, on a house fly (*Musca domestica*) strain reared in the laboratory for >50 years without exposure to pesticides at 26 °C, 45–55% RH, and a photoperiod of 16:8 (L:D) on a larval diet of 2:3:15:8 ratio of calf protein supplement, wood chips, bran and tap water, respectively, and adults maintained on water, nonfat dry milk and sucrose. Three rates of Zyrox Fly Bait (0.5% cyantraniliprole) were formulated for paint-on application by mixing an average of 1.09 g of the product in 2.08, 1.04 or 0.70 ml water to constitute 48, 96, and 144 g product/100 ml water, respectively, which was then painted onto 10 by 10 cm cardboard squares that were suspended from the top of the cage at an a.i. rate of 5.4 mg/100 square cm for all dilutions, although the density of the paste was different at each treatment. Granules of Zyrox were used as a positive control at the 3.2 oz./1000 square feet rate by placing 0.0908 g of the product (0.454 mg cyantraniliprole) within the test cages. The granular rate was about one-tenth the active ingredient rate of the paint-on treatments. Test cages measured 1 by 1 by 1 foot, and received 30 ml dried milk, 30 ml sucrose and water ad libitum. The test was run in six replicates (two blocks of three) with twenty 3- to 5-day post eclosion, 15-hr starved flies released into the cages. The number of dead (ataxic and unable to right self) insects were recorded at 1, 6, 24, 48, 72, and 96 hours and 1 and 2 weeks. The environmental conditions during testing were not reported. The effects of treatment, time and the interaction were analyzed using repeated measures analysis of variance (ANOVA) using the mixed procedure, and residual terms were modelled by considering an autoregressive order 1 error structure and the degrees of freedom were adjusted using the Kenward-Roger method. LSMEANS statements were used to obtain the adjusted means for the effects of treatment, time and the interaction, which were compared using Tukey's Honestly Significant Difference Separation test method at $P < 0.05$.

(3) **Results:** Exposure to 96 and 144 g product/100 ml water and painted onto 10 by 10 cm cardboard squares at an a.i. rate of 5.4 mg/100 square cm caused ≥90% mortality of house flies within 48 and 72 hr, respectively, while exposure to 0.454 mg/cage caused ≥90% mortality of house flies within 48 hr. Control mortality surpassed 10% within 1 week of the study.

(4**) Conclusion**: **Unacceptable.** True mortality (no movement when probed) was not recorded; instead only moribund individuals were reported. The control mortality exceeded 10% at 1 week; at this point, the low concentration (i.e., the lowest labeled rate) had not resulted in efficacy >90% and reached a maximum efficacy of 86% at 2 weeks. It is

recommended that at least 5 replicates of 50 individuals per replicate be used. Data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 14. Cyantraniliprole: Paint-on applications of Zyrox fly granular bait for housefly control (*Musca domestica*) to determine the efficacy of paint-on and scatter treatments of Zyrox against house flies.

(1) non-GLP

(2) **Methods:** This test was conducted in Santa Clara, California, on house flies (*Musca domestica*) field collected from Modesto, California with no history of pesticide application. Tests were conducted in clear plastic containers (25 by 38 by 23 cm) at indoor room conditions for five replicates of 30 houseflies each. Flies acclimated for 24 hr prior to bait introduction and were supplied with water and 1:1 sugar: whole milk powder, after which they were starved "overnight" prior to bait introduction. Granular Zyrox Fly Bait (cyantraniliprole, active ingredient concentration not reported in this report) was tested by placing 0.09 g (equivalent to 3.2 ounces/1000 square feet) of the bait inside the cages. For the paint-on formulations, 1 g of the bait was dissolved in 2.08, 1.04 or 0.70 ml water to constitute 48, 96, and 144 g product/100 ml water, respectively, and then 0.28, 0.18, or 0.15 g of the resulting paste, respectively, was painted onto 10 by 10 cm cardboard squares (to achieve the 0.09 g product per cage rate of the granular treatment) that were suspended from the top of the cage. The tests proceeded at 19 to 30 °C and 31 to 47% RH. The number of live, moribund (not upright, but displaying motion when probed) and dead (no movement when probed) flies were assessed at 1, 6, 24, 48, 72, and 96 hr, then at 1 and 2 weeks after bait placement. Mortality and bait consumption were analyzed by using the general linear model analysis of variance (ANOVA), and compared by using Tukey's multiple comparison. Lethal time values were determined by using probit analysis.

(3) **Results:** Exposure to Zyrox Fly Bait as a granular bait or as a paint-on formulation at the medium and high rates caused ≥90% mortality of house flies within 96 hr. The low rate for the paint-on formulation never resulted in >90% mortality. Control mortality surpassed 10% within two weeks. The time to 90% mortality was 1.20 days for Zyrox scatter treatment, 2.94 days for the middle rate of the paint on, and 2.29 days for the high rate of the paint on.

(4) **Conclusions: Unacceptable.** Although the data suggest that the unaged product, when applied to disposable cards at 1 and 1.5 oz/1 fl oz water, may kill house flies, the flies were starved for an unknown amount of time prior to bait introduction. At least 5 replicates of 50 individuals per replicate is recommended. Data to support the use of the product when applied in a bait station, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 15. Cyantraniliprole: Pest expansion for Zyrox fly bait label. Determination of the efficacy of Zyrox Fly Bait against face flies *(Musca autumnalis)* in granular and paint-on applications compared with a commercial control.

(1) non-GLP

(2) **Methods:** This study was conducted in Raleigh, North Carolina, on 6- to 24-hr starved 3- to 5-day old mixed-sex adults of face fly (*Musca autumnalis*) in five replications of 20 flies per replication from a population field collected and reared in the laboratory for three years on fresh cattle dung as larvae and on water, dry milk and sugar as adults. The flies were released into 2-liter tubs provisioned with a 3:1 sugar: dry milk mixture and water-soaked tissues. For the paint-on formulations, 28.34 g of Zyrox Fly Bait (cyantraniliprole, active ingredient concentration was not reported in this study) was mixed in 29.57 ml water (equivalent to 1 oz bait/fl oz water), then the resulting paste to approximate 0.049 g of the granules was applied to 10 by 10 cm cardboard square. For the granular baits, 0.068 g Zyrox Fly Bait granules or 0.122 g Maxforce granules (active ingredient identity and concentration were not identified in this report) were placed in the tubs. Untreated control groups consisted of replications receiving no bait treatment. Morbidity (moving slowly, unable to right selves but displaying leg movement) or mortality (no detected movement) were determined at 1, 6, 24, 48, 72 and 96 hr exposure. Incapacitation (combined morbidity and mortality) are reported in the raw data. Environmental conditions during testing were not reported. Data were analyzed by using one-way analysis of variance (ANOVA) and treatment means were compared by using Tukey-Kramer honestly significant difference (HSD) tests.

(3) **Results:** Exposure to 0.068 g Zyrox Fly Bait granules or 0.122 g Maxforce granules caused ≥90% incapacitation within 3 days exposure, and ≥90% mortality within 7 days exposure. The paint on formulation of Zyrox Fly Bait did not cause ≥90% incapacitation or mortality during the test and in fact only caused 15% mortality by the end of the study. Control incapacitation or mortality did not surpass 10% during the test.

(4) **Conclusion: Unacceptable.** The disposable card application, when applied at the 1 oz bait/1 fl oz water rate, did not result in >90% mortality and the length of starvation prior to testing was not explicitly specified but appears to be excessive. At least 5 replicates of 50 individuals is recommended. Data to support the use of the product as a scatter bait, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 16. Laboratory evaluation of Zyrox granular fly bait as a potential paint-on application against house flies.

(1) non-GLP

(2) **Methods:** This test was conducted in West Lafayette, Indiana, on 2- to 3-day old mixed-sex, non-starved adult house flies (*Musca domestica*) released 20 per replication in each of five replications within 12 by 12 by 12-inch cages supplied with a water-soaked cotton ball and 5 g of a 1: 1 mixture of powdered milk: sugar. The source of the flies or insecticide susceptibility status was not reported. Zyrox granular fly bait (active ingredient identity and concentration not reported in this study) and Maxforce granular (active ingredient identity and concentration not reported in this study) were tested as granular or paint-on treatments. Paint-on formulations were prepared by dissolving 0.5, 1, or 1.5 ounces of the granular bait in 1 fluid ounce warm water, then applying the resulting paste to 6 by 6 inch glazed ceramic tiles, 6 by 6 inch unpainted wood panels, or 6-inch braided cotton cords. Ceramic tiles and wood panels were painted with 2 ml of the paste, while the cotton cord was dipped (amount of paste taken up not reported) for five minutes before drying overnight. Granular Zyrox or Maxforce were applied at a rate of 0.18 g/cage to the bottom of the cage. The sticky card treatment was achieved by pressing the sticky card into the bait so that an average of 12.6 g of the bait was applied to each sticky card (16 x 11 cm). An untreated control was also tested. The test proceeded at 25 ± 2ºC and 50 ± 10% RH, and fly mortality (criteria not defined) was examined at 2, 4, 6, 8, and 24 hr. The data were not statistically analyzed.

(3) **Results:** Exposure to Zyrox or Maxforce Fly Baits as granular or paint-on applications caused ≥90% mortality within the number of hours for the treatments (or ≥10% for untreated control) indicted in the table below.

Treatment	Rate	Surface	Time (hours) to ≥90% mortality
Zyrox granular	6.4 oz/1000 sq ft	cage bottom	4
Zyrox paint-on	0.5 oz bait : 1 oz water	tile	2
Zyrox paint-on	0.5 oz bait : 1 oz water	wood	2
Zyrox paint-on	1.0 oz bait : 1oz water	cord	4
Zyrox paint-on	1.0 oz bait : 1oz water	tile	2
Zyrox paint-on	1.0 oz bait : 1oz water	wood	2
Zyrox paint-on	1.5 oz bait : 1oz water	cord	4
Zyrox paint-on	1.5 oz bait : 1oz water	tile	4
Zyrox paint-on	1.5 oz bait : 1oz water	wood	2
Zyrox granular	0.4 oz bait per card	sticky card	4
Zyrox paint-on	0.18 g bait in 2 mL water	tile	2
Maxforce paint-on	1.5 oz bait : 1oz water	cord	2
Maxforce paint-on	1.5 oz bait : 1oz water	tile	2
Maxforce paint-on	1.5 oz bait : 1oz water	wood	2
Maxforce granular	6.3 oz/1000 sq ft	cage bottom	2
Water control			Not observed

(4) **Conclusions: Partially acceptable.** The data show that the unaged product kills house flies at the labeled rate when applied as a paint-on to a porous or a non-porous surface (0.5 oz bait/1 fl oz water), as a granular applied to sticky board (0.1 oz/inch squared), and as a paint-on applied to rope (0.5 oz bait/1 fl oz water). It also suggests the unaged product kills house flies at the highest labeled rate when applied as a scatter bait, although it was unclear how this type of lab test would predict efficacy of a scatter bait in the field. In future studies, at least 5 replicates of 50 individuals is recommended.

Appendix 17. Laboratory evaluation of Zyrox Fly Granular Bait as a paint-on application for control of adult house flies (*Musca domestica*) to evaluate the efficacy of Zyrox Fly Bait granules as paint-on application against house flies.

(1) non-GLP

(2) Methods: This study was conducted in Modesto, California, with house flies (*Musca domestica*) from the Hilmar strain maintained in the laboratory and infused periodically with field collected stock. The pesticide susceptibility status and rearing conditions were not reported. This study compared the efficacy of Zyrox Fly Bait (cyantraniliprole 0.5%) to the positive control Bayer Maxforce Granular Fly Bait (0.50% imidacloprid + 0.10% Z-9-tricosene) in paint on formulations prepared by dissolving 31.25, 62.50, or 125.00 g Zyrox in 100 ml water, or 144.00 g Maxforce Fly Bait in 100 ml water, and an unreported amount of the resulting mixture was painted on 5 by 5-inch plastic panels with an acid brush that were allowed to dry for one hour. Untreated control replications received no treated panels. Five replications of 50 adult house flies per treatment were released into 18 by 18 by 18-inch cages containing a water source and 10% sucrose/water solution one hour prior to treated panel introduction. An untreated control was also tested. The test proceeded at 67.5 to 83.2 °F and 37 to 69% RH, and the flies were examined for knockdown (unable to maintain normal position), moribund state (displaying abnormal response to stimuli), and mortality (no response to external stimuli) 1 hour after bait introduction and at 1, 2 and 3 days after bait introduction. The data were not statistically analyzed.

(3) **Results:** Exposure of house flies to Zyrox Fly Bait paint-on prepared by dissolving 62.50 g Zyrox in 100 ml water caused ≥90% mortality within 2 days, and by dissolving 31.25 or 125.00 g Zyrox in 100 ml water caused ≥90% mortality within 3 days. Control mortality remained less than 10% throughout the study.

(4) **Conclusions: Partially acceptable.** The data indicate that the unaged product, when applied to plastic panels at the lowest labeled rate, kills house flies. Data to support the use of the product as a scatter bait, as an application to disposable cards, as a granular treatment to glue boards, as a general paint-on porous surface application, and as an application to rope wick were not provided.

Appendix 19. Laboratory and Field Evaluation of Zyrox Fly Granular Bait Against Asian Cockroaches (*Blattella asahinai*) and German Cockroaches (*Blattella germancia*)

(1) non-GLP

(2) **Methods:** This test was conducted in Raleigh, North Carolina, on male Asian cockroaches (*Blattella asahinai*) of undetermined age from a laboratory colony originally field collected from Auburn, AL and Florida reared on rat chow and water at 27 °C, 45–55% RH, and a photoperiod of 14:10 (L:D), and 10- to 30-day old male German cockroaches (*Blattella germanica*) from the Orlando Normal strain, collected over 60 years prior in Florida and maintained in the testing laboratory since 1989, reared on rat chow and water at 27 °C, 40–70% RH, and 12:12 (L:D). Asian cockroach data will not be reviewed here. All cockroaches were starved for 24 hr prior to the test. Zyrox Fly Granular Bait (0.5% cyantraniliprole), Maxforce Complete Brand Granular Insect Bait (1% hydramethylnon), or rat chow (untreated control) were tested in no-choice assays in 15-cm by 26-mm petri dishes provided with the bottom third of an egg section of an egg carton as a harborage by placing 0.5 g of each bait into a scintillation vial cap then adding 50 German cockroaches. The number of replications was not reported. Two-choice assays were conducted in the same manner as the no-choice assays, with the exception that a rat chow food source was included in the two-choice arenas. The number of replications was not reported. The tests proceeded at 27 °C, 40% RH, and a

photoperiod of 12:12 (L:D). Mortality (insects unable to right themselves or grasp the harborage) was evaluated every 2 hr for the first 8 hr, at 20–24 hr, then three times daily until the end of the tests. The same set up for the no-choice assay was used to determine contact versus ingestion toxicity in 30 male German cockroaches per replication by immobilizing the mouthparts with glue then exposing to Zyrox bait (or rat chow control) after a recovery period. The test proceeded at 25 °C, 40% RH, and 12:12 (L:D) before evaluating mortality as described above.

(3) **Results:** Exposure to Zyrox Fly Granular Bait or Maxforce Complete Brand Granular Insect Bait in no-choice and two-choice tests caused ≥90% mortality (or ≥10% mortality in the untreated control) within the number of days indicated in Table 1 (Note: The numbers in Table 1 are visual estimates of the curves presented in Figure 1 from the paper). Contact-only exposure by German cockroaches to Zyrox Fly Granular Bait caused ≥90% mortality within 4 days (based on visual estimate of the curve presented in Figure 2 from the paper). This was not different than the contact control group.

Table 1.

	No-choice test		Two-choice test	
	Asian cockroach	German cockroach	Asian cockroach	German cockroach
Zyrox	2	1	2	1
Maxforce	4	3	5	3
Control	4	NO	4	NO

(4) **Conclusion: Unacceptable.** For the non-choice/choice tests, the cockroaches were starved for an unacceptable amount of time, the number of replicates was not reported, moribund (not dead) individuals were used for mortality counts, raw data were not provided so any reported efficacy data had to be estimated from graphs, and tests to support baits should be choice tests. The same deficiencies apply to the ingestion vs contact test, with the addition of the fact that the contact treatment provided the same level of efficacy as the control treatment. Data to support the use of the product as a scatter bait, as an application to disposable cards, as a granular treatment to glue boards, as a general paint-on surface application, and as an application to rope wick were not provided.

Appendix 20. Laboratory Comparison of German Cockroach (*Blattella germanica*) Feeding Preferences for Several Cockroach Baits

(1) non-GLP

(2) **Methods:** This test was conducted in Las Cruces, New Mexico, on a laboratory colony of Bakersfield strain German cockroaches (*Blattella germanica*) with a reported intermediate-level resistance to indoxacarb. Advion Cockroach Gel Bait (active ingredient not reported), Advion Evolution Cockroach Gel Bait (active ingredient not reported), Optigard Cockroach Gel Bait (active ingredient not reported), Maxforce FC Magnum (fipronil and an unreported concentration), Vendetta Plus (abamectin B1 + pyriproxyfen at unreported concentrations), and Zyrox Fly Granular Bait (cyantraniliprole at an unreported concentration) were compared to a 1:1:1:1 mixture of rabbit: dog: cat: corn puff cereal cockroach food. Tests were conducted in 29.2-cm diameter (669.7 square cm) plastic cake containers into which 0.5 g portions of each bait or cockroach food was placed in a spoke-and-wheel arrangement with equidistant placing. Single cockroaches in seven replications for males and seven replications for females were released into the arenas. Cockroach positions were recorded with a camera for 20 minutes. Latency (time to make first contact with bait) and the number of visits and time spent in each bait zone were analyzed. The test proceeded at 26 °C and 40% RH. Latency to contact a bait versus cockroach food was analyzed by Mann-Whitney Test, $P < 0.05$, the number of visits to each bait and the time spent on each bait was compared to cockroach food by using a paired *t*-test at $P < 0.05$.

(3) **Results:** German cockroaches took significantly less time to reach the bait, visited the bait more times, and spent more time on the bait for Zyrox compared to the untreated cockroach food. They also took less time to visit Zyrox compared to 3 of the 5 other baits tested.

(4) Conclusion: Supplemental. The study suggests that German cockroaches may be more attracted to Zyrox compared to untreated roach food, although the level of replication was low.

IV. EXECUTIVE DATA SUMMARY:

Bait station and broadcast granular bait use was previously approved on the label for house fly control. The new data submitted indicate that the product:

- Kills stable flies when applied at a rate of 0.215 lbs bait/1000 square feet in bait stations indoors
- Kills stable flies when applied at a rate of 1.5 oz bait/1 fl oz water to disposable cards indoors
- Kills house flies when applied at a rate of 0.5-1.5 oz bait/1 fl oz water to disposable cards indoors
- Kills house flies when applied at a rate of 0.5-1.5 oz bait/1 fl oz water to rope-wick indoors
- Kills house flies when applied at a rate of 0.5-1.5 oz bait/1 fl oz water as a paint-on to porous and non-porous surfaces indoors
- Kills house flies when applied at a rate of 0.1 oz bait/square inch of card surface when applied to sticky cards indoors

Additional controls claims or outdoor use claims are not supported (only unaged bait was tested and only indoor studies were provided), nor are claims against cockroaches, ants, or public health pest flies other than as listed above.

V. LABEL RECOMMENDATIONS:

(1) Make the following changes in the Directions for Use (comments only apply to newly proposed public health pests/uses):

- Throughout the label, delete references to "insects," "crawling insect pests," and "crawling pests" from the directions for use. The first term is too vague and the second and third terms are vague and no data for crawling pests were acceptable.
- Throughout the label, delete references to cockroaches, blow flies, face flies, bottle flies, and flesh flies.
- On page 1, change "Granular insect bait for use in and around residential, commercial, institutional, and agricultural structures to control flies and crawling pests" to read "Granular bait for use in and around residential, commercial, institutional, and agricultural structures to control house flies" (The phrase could also be revised to indicate that the product kills stable flies indoors.)
- On page 4, change "Controls flies and crawling pests in and around residential, commercial, institutional and agricultural structures" to read "Controls house flies in and around residential, commercial, institutional and agricultural structures" (The phrase could also be revised to indicate that the product kills stable flies indoors.)
- On page 6, indicate that the broadcast DFU only apply to house flies.
- On page 6, indicate that the bait station use at a low rate of 0.2 lb/1000 square feet applies to house flies, while bait station use at a low rate of 0.215 lb/1000 square feet applies to stable flies indoors.
- On page 7, indicate that the following application methods only apply to house flies indoors: glue-board/stick cards, paint-on method, rope wick application.
- On page 7, indicate that application to disposable cards only applies to house flies indoors at a rate of 0.5-1.5 oz bait/1 fl oz water but applies to stable flies indoors at a rate of 1.5 oz bait/1 fl oz water.
- On page 8, regarding the table:
    - Change "Pests Controlled" to "Pests Killed" if stable flies will be included
    - Delete cockroaches, blow flies, face flies, bottle flies, and flesh flies
    - Indicate for the stable fly that only indoor bait station and disposable card application is applicable
    - Indicate for the house flies that in addition to the previously approved broadcast and bait station use indoors and outdoors, only indoor glue-board, paint-on, rope-wick, or disposable card application is applicable